Plant Science, 53 (1987) 281 – 284
Elsevier Scientific Publishers Ireland Ltd.

SUBJECT INDEX

Volume 53 (1987/1988)

Acclimatization, in vitro hardening, *Leucaena leucocephala*, micropropagation, tissue culture, 65
Acetate incorporation, systemic insecticides, *Brassica juncea* L., developing seeds, lipid biosynthesis, 201
O-Acetyl-L-serine sulfhydrylase, *Chlamydomonas reinhardtii*, purification, characterization, 93
Adventitious buds, bud primordia, Calabrian pine, meristematic zones, pulse treatment, 147
Ageing, chilling, campesterol, sitosterol/stigmasterol, *Phaseolus vulgaris*, 209
Amaranthus paniculatus, calmodulin, phosphoinositides, glyoxalase, cell proliferation, 45
Amyloplast, wheat, *Triticum aestivum* L., plastid DNA, endosperm, 131
ATPase, Mg^{2+} to ATP ratio, inhibition, plasma membrane, 39
Avena coleoptile test, plant growth inhibition, fatty acids, 35

Black cherry seeds, *Prunus serotina*, α-D-mannosidase, glycoproteins, swainsonine inhibition, 1
Black locust, *Robina pseudoacacia* L., micropropagation, tissue culture, nitrogen-fixing tree, forestry, rejuvenation, 183
Blue light perception, *Brassica oleracea* L., NADH oxidase, plasma membrane purification, *Vigna radiata* L., redox components, 109
Brassica juncea L., systemic insecticides, developing seeds, lipid biosynthesis, acetate incorporation, 201
Brassica napus, cybrids, cytoplasmic male sterility, mitochondrial DNA, protoplast fusion, oilseed rape, 243
Brassica oleracea L., blue light perception, NADH oxidase, plasma membrane purification, *Vigna radiata* L., redox components, 109
Bud primordia, adventitious buds, Calabrian pine, meristematic zones, pulse treatment, 147

Calabrian pine, adventitious buds, bud primordia, meristematic zones, pulse treatment, 147
Calmodulin, *Amaranthus paniculatus*, phosphoinositides, glyoxalase, cell proliferation, 45
Campesterol, chilling, ageing, sitosterol/stigmasterol, *Phaseolus vulgaris*, 209
Carotenoid/chlorophyll, chill-sensitivity, choline, chlorophyll, water stress, chill hardening, *Vigna radiata*, 223
Cell differentiation, in vitro morphogenesis, nuclear DNA, changes in DNA, *Nicotiana tabacum*, 73
Cell proliferation, *Amaranthus paniculatus*, calmodulin, phosphoinositides, glyoxalase, 45
–, protein kinase, germination, *Pisum sativum*, 271
Changes in DNA, in vitro morphogenesis, nuclear DNA, cell differentiation, *Nicotiana tabacum*, 73
Characterization, *Chlamydomonas reinhardtii*, *O*-acetyl-L-serine sulfhydrylase, purification, 93
Chill hardening, chill-sensitivity, choline, chlorophyll, carotenoid/chlorophyll, water stress, *Vigna radiata*, 223
Chilling, ageing, campesterol, sitosterol/stigmasterol, *Phaseolus vulgaris*, 209
Chill-sensitivity, choline, chlorophyll, carotenoid/chlorophyll, water stress, chill hardening, *Vigna radiata*, 223
Chlamydomonas reinhardtii, *O*-acetyl-L-serine sulfhydrylase, purification, characterization, 93
Chlorophyll, chill-sensitivity, choline, carotenoid/chlorophyll, water stress, chill hardening, *Vigna radiata*, 223
Choline, chill-sensitivity, chlorophyll, carotenoid/chlorophyll, water stress, chill hardening, *Vigna radiata*, 223
Citrullus lanatus, ribulose bisphosphate carboxylase, subunits, synthesis, phytochrome, light, 121
Colon formation, maize, *Zea mays* L., protoplasts, conditioned medium, 249
Conditioned medium, maize, *Zea mays* L., protoplasts, colon formation, 249
Culture cycle, folate interconversion, folate enzymes, *Euglena*, 21
Cybrids, *Brassica napus*, cytoplasmic male sterility, mitochondrial DNA, protoplast fusion, oilseed rape, 243
Cytoplasmic male sterility, *Brassica napus*, cybrids, mitochondrial DNA, protoplast fusion, oilseed rape, 243

Developing seeds, systemic insecticides, *Brassica juncea* L., lipid biosynthesis, acetate incorporation, 201
Direct gene transfer, *Nicotiana tabacum*, *Vigna aconitifolia*, plant cultivar, 87
Distribution, lectin activity, tissues, winged bean (*Psophocarpus tetragonolobus* (L.) DC), 161
Dwarf plants development, gibberellic acid, poly(A)-mRNA, in vitro translation, 11

Endosperm, wheat, *Triticum aestivum* L., amyloplast, plastid DNA, 131
Enzyme changes, vegetable marrow (*Cucurbita pepo* L.), growth, kinetin, reducing sugars, sucrose, 29
Epilobium, plastids, ultrastructural observations, microgametogenesis, 139

Euglena, folate interconversion, folate enzymes, culture cycle, 21

Fatty acids, plant growth inhibition, *Avena* coleoptile test, 35
1′-Fluorosucrose, fructose, glucose, sucrose carrier, sugar transport, 101
Folate enzymes, folate interconversion, culture cycle, *Euglena*, 21
Folate interconversion, folate enzymes, culture cycle, *Euglena*, 21
Forestry, *Robina pseudoacacia* L., Black locust, micropropagation, tissue culture, nitrogen-fixing tree, rejuvenation, 183
Fructose, 1′-fluorosucrose, glucose, sucrose carrier, sugar transport, 101

Genomic variability, wheat, somatic tissue culture, mitochondrial DNA, reciprocal recombination, 191
Germination, protein kinase, cell proliferation, *Pisum sativum*, 271
Gibberellic acid, dwarf plants development, poly(A)-mRNA, in vitro translation, 11
Glucose, 1′-fluorosucrose, fructose, sucrose carrier, sugar transport, 101
Glutathione, homoglutathione, synthetase, purification, specificity, mung bean, pea, 229
Glutelins, immunoblotting, 'in situ' hybridization, Northern blot analysis, *Zea mays* embryo, zeins, 215
Glycoproteins, *Prunus serotina*, black cherry seeds, α-D-mannosidase, swainsonine inhibition, 1
Glyoxalase, *Amaranthus paniculatus*, calmodulin, phosphoinositides, cell proliferation, 45
Growth, vegetable marrow (*Cucurbita pepo* L.), enzyme changes, kinetin, reducing sugars, sucrose, 29
Growth regulators, *Pithecellobium dulce*, tree legume, protoplasts, plant regeneration, osmotic potential, protoplast isolation enzymes, 257

Hairy root, kanamycin resistance, T-DNA of *Agrobacterium rhizogenes*, transformation, tobacco, 53
Homoglutathione, glutathione, synthetase, purification, specificity, mung bean, pea, 229

Immunoblotting, glutelins, 'in situ' hybridization, Northern blot analysis, *Zea mays* embryo, zeins, 215
Inhibition, ATPase, Mg^{2+} to ATP ratio, plasma membrane, 39
'In situ' hybridization, glutelins, immunoblotting, Northern blot analysis, *Zea mays* embryo, zeins, 215
In vitro hardening, acclimatization, *Leucaena leucocephala*, micropropagation, tissue culture, 65
In vitro morphogenesis, nuclear DNA, cell differentiation, changes in DNA, *Nicotiana tabacum*, 73
In vitro translation, gibberellic acid, dwarf plants development, poly(A)-mRNA, 11
Ipomoea batatas, sweet potato, protoplasts, mesophyll protoplasts, 157

Isozymes, somaclonal variation, potato, 81
Isoenzymes, *Medicago*, somatic hybridization, protoplast fusion, manual isolation, nurse culture, 263

Kanamycin resistance, hairy root, T-DNA of *Agrobacterium rhizogenes*, transformation, tobacco, 53
Kinetin, vegetable marrow (*Cucurbita pepo* L.), growth, enzyme changes, reducing sugars, sucrose, 29

Lectin activity, distribution, tissue, winged bean (*Psophocarpus tetragonolobus* (L.) DC), 161
Lemon, *Phoma tracheiphila*, Mal secco, variability, 177
Leucaena leucocephala, acclimatization, in vitro hardening, micropropagation, tissue culture, 65
Light, *Citrullus lanatus*, ribulose bisphosphate carboxylase, subunits, synthesis, phytochrome, 121
Lipid biosynthesis, systemic insecticides, *Brassica juncea* L, developing seeds, acetate incorporation, 201

Maize, *Zea mays* L., protoplasts, conditioned medium, colon formation, 249
Mal secco, *Phoma tracheiphila*, lemon, variability, 177
α-D-Mannosidase, *Prunus serotina*, black cherry seeds, glycoproteins, swainsonine inhibition, 1
Manual isolation, *Medicago*, somatic hybridization, protoplast fusion, murse culture, isoenzymes, 263
Medicago, mitochondrial and chloroplastic DNAs, mitochondrial recombination, somatic hybrids, 237
—, somatic hybridization, protoplast fusion, manual isolation, nurse culture, isoenzymes, 263
Meristematic zones, adventitious buds, bud primordia, Calabrian pine, pulse treatment, 147
Mesophyll protoplasts, *Ipomoea batatas*, sweet potato, protoplasts, 157
Mg^{2+} to ATP ratio, ATPase, inhibition, plasma membrane, 39
Microgametogenesis, plastids, epilobium, ultrastructural observations, 139
Micropropagation, acclimatization, in vitro hardening, *Leucaena leucocephala*, tissue culture, 65
—, *Robina pseudoacacia* L., Black locust, tissue culture, nitrogen-fixing tree, forestry, rejuvenation, 183
Mitochondrial and chloroplastic DNAs, mitochondrial recombination, somatic hybrids, *Medicago*, 237
Mitochondrial DNA, *Brassica napus*, cybrids, cytoplasmic male sterility, protoplast fusion, oilseed rape, 243
—, wheat, somatic tissue culture, genomic variability, reciprocal recombination, 191
Mitochondrial recombination, mitochondrial and chloroplastic DNAs, somatic hybrids, *Medicago*, 237
Mung bean, homoglutathione, glutathione, synthethase, purification, specificity, pea, 229

NADH oxidase, blue light perception, *Brassica oleracea* L., plasma membrane purification, *Vigna radiata* L., redox components, 109
Nicotiana tabacum, in vitro morphogenesis, nuclear DNA, cell differentiation, changes in DNA, 73

—, *Vigna aconitifolia*, direct gene transfer, plant cultivar, 87

Nitrogen-fixing tree, *Robina pseudoacacia* L., Black locust, micropropagation, tissue culture, forestry, rejuvenation, 183

Northern blot analysis, glutelins, immunoblotting, 'in situ' hybridization, *Zea mays* embryo, zeins, 215

Nuclear DNA, in vitro morphogenesis, cell differentiation, changes in DNA, *Nicotiana tabacum*, 73

Nurse culture, *Medicago*, somatic hybridization, protoplast fusion, manual isolation, isoenzymes, 263

Oilseed rape, *Brassica napus*, cybrids, cytoplasmic male sterility, mitochondrial DNA, protoplast fusion, 243

Osmotic potential, *Pithecellobium dulce*, tree legume, protoplasts, plant regeneration, growth regulators, protoplast isolation enzymes, 257

Pea, homoglutathione, glutathione, synthetase, purification, specificity, mung bean, 229

Phaseolus vulgaris, chilling, ageing, campesterol, sitosterol/stigmasterol, 209

Phoma tracheiphila, lemon, Mal secco, variability, 177

Phosphoinositides, *Amaranthus paniculatus*, calmodulin, glyoxalase, cell proliferation, 45

Phytochrome, *Citrullus lanatus*, ribulose bisphosphate carboxylase, subunits, synthesis, light, 121

Pisum sativum, protein kinase, cell proliferation, germination, 271

Pithecellobium dulce, tree legume, protoplasts, plant regeneration, growth regulators, osmotic potential, protoplast isolation enzymes, 257

Plant cultivar, *Nicotiana tabacum*, *Vigna aconitifolia*, direct gene transfer, 87

Plant growth inhibition, fatty acids, *Avena* coleoptile test, 35

Plant regeneration, *Pithecellobium dulce*, tree legume, protoplasts, growth regulators, osmotic potential, protoplast isolation enzymes, 257

Plasma membrane, ATPase, Mg^{2+} to ATP ratio, inhibition, 39

Plasma membrane purification, blue light perception, *Brassica oleracea* L., NADH oxidase, *Vigna radiata* L., redox components, 109

Plastid DNA, wheat, *Triticum aestivum* L., amyloplast, endosperm, 131

Plastids, epilobium, ultrastructural observations, microgametogenesis, 139

Poly(A)-mRNA, gibberellic acid, dwarf plants development, in vitro translation, 11

Potato, somaclonal variation, isozymes, 81

Protein kinase, cell proliferation, germination, *Pisum sativum*, 271

Protoplast fusion, *Brassica napus*, cybrids, cytoplasmic male sterility, mitochondrial DNA, oilseed rape, 243

—, *Medicago*, somatic hybridization, manual isolation, nurse culture, isoenzymes, 263

Protoplast isolation enzymes, *Pithecellobium dulce*, tree legume, protoplasts, plant regeneration, growth regulators, osmotic potential, 257

Protoplasts, *Ipomoea batatas*, sweet potato, mesophyll protoplasts, 157

—, maize, *Zea mays* L., conditioned medium, colon formation, 249

—, *Pithecellobium dulce*, tree legume, plant regeneration, growth regulators, osmotic potential, protoplast isolation enzymes, 257

—, *Solanum tuberosum* L., regeneration, 167

Prunus serotina, black cherry seeds, α-D-mannosidase, glycoproteins, swainsonine inhibition, 1

Pulse treatment, adventitious buds, bud primordia, Calabrian pine, meristematic zones, 147

Purification, *Chlamydomonas reinhardtii*, *O*-acetyl-L-serine sulfhydrylase, characterization, 93

—, homoglutathione, glutathione, synthetase, specificity, mung bean, pea, 229

Reciprocal recombination, wheat, somatic tissue culture, mitochondrial DNA, genomic variability, 191

Redox components, blue light perception, *Brassica oleracea* L., NADH oxidase, plasma membrane purification, *Vigna radiata* L., 109

Reducing sugars, vegetable marrow (*Cucurbita pepo* L.), growth, enzyme changes, kinetin, sucrose, 29

Regeneration, *Solanum tuberosum* L., protoplasts, 167

Rejuvenation, *Robina pseudoacacia* L., Black locust, micropropagation, tissue culture, nitrogen-fixing tree, forestry, 183

Ribulose bisphosphate carboxylase, *Citrullus lanatus*, subunits, synthesis, phytochrome, light, 121

Robina pseudoacacia L., Black locust, micropropagation, tissue culture, nitrogen-fixing tree, forestry, rejuvenation, 183

Sitosterol/stigmasterol, chilling, ageing, campesterol, *Phaseolus vulgaris*, 209

Solanum tuberosum L., protoplasts, regeneration, 167

Somaclonal variation, isozymes, potato, 81

Somatic hybridization, *Medicago*, protoplast fusion, manual isolation, nurse culture, isoenzymes, 263

Somatic hybrids, mitochondrial and chloroplastic DNAs, mitochondrial recombination, *Medicago*, 237

Somatic tissue culture, wheat, mitochondrial DNA, genomic variability, reciprocal recombination, 191

Specificity, homoglutathione, glutathione, synthetase, purification, mung bean, pea, 229

Subunits, *Citrullus lanatus*, ribulose bisphosphate carboxylase, synthesis, phytochrome, light, 121

Sucrose, vegetable marrow (*Cucurbita pepo* L.), growth, enzyme changes, kinetin, reducing sugars, 29

Sucrose carrier, 1′-fluorosucrose, fructose, glucose, sugar transport, 101

Sugar transport, 1′-fluorosucrose, fructose, glucose, sucrose carrier, 101

Swainsonine inhibition, *Prunus serotina*, black cherry seeds, α-D-mannosidase, glycoproteins, 1

Sweet potato, *Ipomoea batatas*, protoplasts, mesophyll protoplasts, 157
Synthesis, *Citrullus lanatus*, ribulose bisphosphate carboxylase, subunits, phytochrome, light, 121
Synthetase, homoglutathione, glutathione, purification, specificity, mung bean, pea, 229
Systemic insecticides, *Brassica juncea* L, developing seeds, lipid biosynthesis, acetate incorporation, 201

T-DNA of *Agrobacterium rhizogenes*, hairy root, kanamycin resistance, transformation, tobacco, 53
Tissue culture, acclimatization, in vitro hardening, *Leucaena leucocephala*, micropropagation, 65
Tissue culture, *Robina pseudoacacia* L., Black locust, micropropagation, nitrogen-fixing tree, forestry, rejuvenation, 183
Tissues, distribution, lectin activity, winged bean (*Psophocarpus tetragonolobus* (L.) DC), 161
Tobacco, hairy root, kanamycin resistance, T-DNA of *Agrobacterium rhizogenes*, transformation, 53
Transformation, hairy root, kanamycin resistance, T-DNA of *Agrobacterium rhizogenes*, tobacco, 53
Tree legume, *Pithecellobium dulce*, protoplasts, plant regeneration, growth regulators, osmotic potential, protoplast isolation enzymes, 257
Triticum aestivum L., wheat, amyloplast, plastid DNA, endosperm, 131

Ultrastructural observations, plastids, epilobium, microgametogenesis, 139

Variability, *Phoma tracheiphila*, lemon, Mal secco, 177
Vegetable marrow (*Cucurbita pepo* L.), growth, enzyme changes, kinetin, reducing sugars, sucrose, 29
Vigna aconitifolia, *nicotiana tabacum*, direct gene transfer, plant cultivar, 87
Vigna radiata, chill-sensitivity, choline, chlorophyll, carotenoid/chlorophyll, water stress, chill hardening, 223
Vigna radiata L., blue light perception, *Brassica oleracea* L., NADH oxidase, plasma membrane purification, redox components, 109

Water stress, chill-sensitivity, choline, chlorophyll, carotenoid/chlorophyll, chill hardening, *Vigna radiata*, 223
Wheat, somatic tissue culture, mitochondrial DNA, genomic variability, reciprocal recombination, 191
—, *Triticum aestivum* L., amyloplast, plastid DNA, endosperm, 131
Winged bean (*Psophocarpus tetragonolobus* (L.) DC), distribution, lectin activity, tissues, 161

Zea mays embryo, glutelins, immunoblotting, 'in situ' hybridization, Northern blot analysis, zeins, 215
Zea mays L., maize, protoplasts, conditioned medium, colon formation, 249
Zeins, glutelins, immunoblotting, 'in situ' hybridization, Northern blot analysis, *Zea mays* embryo, 215

Plant Science, 53 (1987) 285–286
Elsevier Scientific Publishers Ireland Ltd.

AUTHOR INDEX

Volume 53 (1987/1988)

Abdullah, A.A. 147
Alicchio, R. 81
Altamura, M.M. 73
Antonioli, C. 81
Asard, H. 109

Bagga, S. 45
Bakhetia, D.R.C. 201
Barghchi, M. 183
Barsby, T.L. 243
Bassi, P. 73
Bayliss, M.W. 131
Benslimane, A.-A. 191
Bhojwani, S.S. 65
Bianchetti, R. 21
Binberg, P.R. 249
Botha, F.C. 121
Bralczyk, J. 11
Brenner, M.L. 249
Briskin, D.P. 39

Caboche, M. 53
Caubergs, R. 109
Cavallini, A. 73
Chiatante, D. 271
Chin, C.-K. 101
Cionini, G. 73
Cionini, P.G. 73
Cocking, E.C. 263
Cremonini, R. 73
Crosti, P. 21

Daie, J. 101
Das, R. 45
Dattee, Y. 237
Davey, M.R. 263
de Buyser, J. 191
De Greef, J.A. 109
Dhawan, V. 65
D'hont, A. 237
Dowson Day, M.J. 131

Eapen, S. 87

Falconet, D. 191

Galván, F. 93
Gambini, A. 21
Giannini, J.L. 39
Gill, R. 257
Gilmour, D.M. 263
Golz, C. 87
Gómez, J. 215
Grace, J. 147
Grant, I. 243
Graziani, L. 81
Gupta, S. 29
Guye, M.G. 209,223

Hartmann, C. 191
Henry, Y. 191

Jouanin, L. 53

Kemble, R.J. 243
Köhler, F. 87
Kowallik, K.V. 139
Kumari, A. 201

Lecerf, M. 167
Lejeune, B. 191
León, J. 93
Levi, M. 271
Ludevid, M.D. 215

Macnicol, P.K. 229
Madaiah, M. 161
Masson, J. 167
Miller, G.W. 39
Monacelli, B. 73
Muller, J.F. 53
Munshi, S.K. 201

Nadel, B. 177
Niizeki, H. 157
Nishikawa, Y. 35

Ohkawa, M. 35
Otani, M. 157

Pagès, M. 215
Pasqua, G. 73
Paul, Y. 29
Pautot, V. 53
Pelletier, G. 167
Perennec, P. 167
Petersen, W.L. 249

Pitcher, L. 101
Poulton, J.E. 1
Pryke, J.A. 131
Puigdomènech, P. 215
Pushnik, J.C. 39

Quetier, F. 191, 237

Renders, D. 109
Rode, A. 191
Romero, L.C. 93
Roncarati, R. 81
Rousselle, P. 167

Sanadi, S. 201
Sánchez-Martínez, D. 215
Sassoli, O. 73
Saxena, P.K. 257
Schieder, O. 87
Schmitz, U.K. 139
Sgorbati, S. 271
Shet, M.S. 161
Shimada, T. 157
Small, J.G.C. 121
Somers, D.A. 249
Sopory, S.K. 45
Sparvoli, E. 271
Spiegel-Roy, P. 177
Sukhija, P.S. 201
Szczegielniak, J. 11

Teoule, E. 237
Torrent, M. 215
Tourneur, C. 53
Tourneur, J. 53
Tran Thanh Van, K. 73

Vannini, C. 81
Vega, J.M. 93
Vigh, L. 223
Vilaine, F. 53

Waln, K.T. 1
Wasilewska, L.D. 11
Wilson, J.M. 223

Yarrow, S.A. 243

Plant Science, 53 (1987) 287–288
Elsevier Scientific Publishers Ireland Ltd.

VOLUME CONTENTS

Volume 53 (1987/1988)

PUBLISHER'S NOTE v

PHYSIOLOGY AND BIOCHEMISTRY

Partial purification and characterization of an α-D-mannosidase from mature seeds of *Prunus serotina* Ehrh.
by K.T. Waln and J.E. Poulton (Iowa City, IA) 1–10

The role of gibberellin in regulation of dwarf plants development
by L.D. Wasilewska, J. Bralczyk and J. Szczegielniak (Warsaw, Poland) 11–19

Culture cycle dependence of folate interconversion and related enzymes in *Euglena gracilis*
by P. Crosti, A. Gambini and R. Bianchetti (Milan, Italy) 21–27

Effect of kinetin (6-furfuyl aminopurine) on changes in activities of some enzymes of lipid-carbohydrate metabolism in relation to growth of isolated cotyledons of vegetable marrow (*Cucurbita pepo* L.)
by Y. Paul and S. Gupta (Ludhiana, India) 29–34

Plant growth inhibitory activity of fatty acids and the related compounds by the *Avena* coleoptile test
by M. Ohkawa and Y. Nishikawa (Kanazawa, Japan) 35–38

Fluoride effects on the plasma membrane ATPase of sugarbeet
by J.L. Giannini, J.C. Puchnik, D.P. Briskin and G.W. Miller (Urbana, IL) 39–44

Involvement of phosphoinositides, calmodulin and glyoxalase-I in cell proliferation in callus cultures of *Amaranthus paniculatus*
by R. Das, S. Bagga and S.K. Sopory (New Delhi, India) 45–51

GENETICS AND MOLECULAR BIOLOGY

Transfer of a 4.3-kb fragment of the TL-DNA of *Agrobacterium rhizogenes* strain A4 confers the pRi transformed phenotype to regenerated tobacco plants
by L. Jouanin, F. Vilaine, J. Tourneur, C. Tourneur, V. Pautot, J.F. Muller and M. Caboche (Versailles, France) 53–63

CELL AND TISSUE STUDIES IN VITRO

Hardening in vitro and morpho-physiological changes in the leaves during acclimatization of micropropagated plants of *Leucaena leucocephala* (Lam.) de Wit.
by V. Dhawan and S.S. Bhojwani (Delhi, India) 65–72

Nuclear DNA changes during plant development and the morphogenetic response in vitro of *Nicotiana tabacum* tissues
by M.M. Altamura, P. Bassi, A. Cavallini, G. Cionini, R. Cremonini, B. Monacelli, G. Pasqua, O. Sassoli, K. Tran Thanh Van and P.G. Cionini (Rome, Pisa and Perugia, Italy and Gif sur Yvette, France) 73–79

Isozyme variation in leaf-callus regenerated plants of *Solanum tuberosum*
by R. Allicchio, C. Antonioli, L. Graziani, R. Roncarati and C. Vannini (Bologna, Italy) 81–86

Influence of plant cultivar and plasmid-DNA on transformation rates in tobacco and moth bean
by F. Köhler, C. Golz, S. Eapen and O. Schieder (Berlin, F.R.G.) 87–91

PHYSIOLOGY AND BIOCHEMISTRY

Purification and physicochemical characterization of *O*-acetyl-L-serine sulfhydrylase from *Chlamydomonas reinhardtii*
by J. León, L.C. Romero, F. Galván and J.M. Vega (Sevilla, Spain) 93–99

Differential rates of sucrose and hexose transport by asparagus cell cultures
by J. Daie, C.-K. Chin and L. Pitcher (New Brunswick, NJ) 101–107

Duroquinone-stimulated NADH oxidase and *b* type cytochromes in the plasma membrane of cauliflower and mung beans
by H. Asard, R. Caubergs, D. Renders and J.A. De Greef (Antwerp, Belgium) 109–119

Control of ribulose 1,5-bisphosphate carboxylase synthesis in the cotyledons of *Citrullus lanatus*
by F.C. Botha and J.G.C. Small (Bloemfontein, Republic of South Africa) 121–129

GENETICS AND MOLECULAR BIOLOGY

Plastid DNA during grain filling in wheat
by M.J. Dowson Day, M.W. Bayliss and J.A. Pryke (Bracknell, U.K.) 131–138

Why are plastids maternally inherited in *Epilobium?* Ultrastructural observations during microgametogenesis
by U.K. Schmitz and K.V. Kowallik (Düsseldorf, F.R.G.) 139–145

CELL AND TISSUE STUDIES IN VITRO

Regeneration of Calabrian pine from juvenile needles
by A.A. Abdullah and J. Grace (Edinburgh, U.K.) 147–155

Mesophyll protoplast culture of sweet potato (*Ipomoea batatas* L.)
by M. Otani, T. Shimada and H. Niizeki (Ishikawa, Japan) 157–160

Distribution of lectin activity at different stages in the tissue of winged bean (*Psophocarpus tetragonolobus* (L.)DC)
by M.S. Shet and M. Madaiah (Dharwad, India) 161–165

Plant regeneration from protoplasts of diploid potato derived from crosses of *Solanum tuberosum* with wild solanum species
by J. Masson, M. Lecerf, P. Rousselle, P. Perennec and G . Pelletier (Versailles and Landerneau, France) 167–176

Selection of *Citrus limon* cell culture variants resistant to the Mal secco toxin
by B. Nadel and P. Spiegel-Roy (Bet Dagan, Israel) 177–182

Mass clonal propagation in vitro of *Robinia pseudoacacia* L. (Black locust) cv. 'Jaszkiseri'
by M. Barghchi (Palmerston North, New Zealand) 183–189

Time-course of mitochondrial genome variation in wheat embryogenic somatic tissue cultures
by C. Hartmann, J. de Buyser, Y. Henry, D. Falconet, B. Lejeune, A.-A. Benslimane, F. Quetier and A. Rode (Orsay, France) 191–198

ANNOUNCEMENT 199

PHYSIOLOGY AND BIOCHEMISTRY

Influence of systemic insecticides on lipid biosynthesis in seeds of Indian mustard (*Brassica juncea* L.)
by S.K. Munshi, A. Kumari, S. Sanadi, D.R.C. Bakhetia and P.S. Sukhija (Ludhiana, India) 201–208

Chilling and age related changes in the free sterol composition of *Phaseolus vulgaris* L. primary leaves
by M.G. Guye (Gwynedd, U.K.) 209–213

Absence of storage protein synthesis in the embryo of *Zea mays*
by D. Sánchez-Martínez, J. Gómez, M.D. Ludevid, M. Torrent, P. Puig-Domènech and M. Pages 215–221

Choline induced chill-tolerance in mung bean (*Vigna radiata* L. Wilcz.)
by M.G. Guye, L. Vigh and J.M. Wilson (Gwynedd, U.K. and Szeged, Hungary) 223–228

Homoglutathione and glutathione synthetases of legume seedlings: partial purification and substrate specificity
by P.K. Macnicol (Canberra, Australia) 229–235

GENETICS AND MOLECULAR BIOLOGY

Mitochondrial and chloroplast DNA analysis of interspecific somatic hybrids of leguminosae: *Medicago* (alfalfa)
by A. D'hont, F. Quetier, E. Teoule and Y. Dattee (Orsay, France) 237–242

The transfer of cytoplasmic male sterility to winter-type oilseed rape (*Brassica napus* L.) by protoplast fusion
by T.L. Barry, S.A. Yarrow, R.J. Kemble and I. Grant (Mississauga, Canada) 243–248

CELL AND TISSUE STUDIES IN VITRO

The effect of conditioned medium colony formation of 'Black Mexican Sweet' corn protoplasts
by D.A. Somers, P.R. Birnberg, W.L. Petersen and M.L. Brenner (St. Paul, MN) 249–256

Plant regeneration from mesophyll protoplasts of the tree legume *Pithecellobium dulce* Benth.
by P.K. Saxena and R. Gill (Saskatoon, Canada and Bombay, India) 257–262

Isolation and culture of heterokaryons following fusion of protoplasts from sexually compatible and sexually incompatible *Medicago* species
by D.M. Gilmour, M.R. Davey and E.C. Cocking (Nottingham, U.K.) 263–270

Protein kinase activity in meristematic root tips of *Pisum sativum* during germination
by D. Chiatante, M. Levi, S. Sgorbati and E. Sparvoli (Milan, Italy) 271–279

Subject Index Volume 53 281–284

Author Index Volume 53 285–286

Contents Volume 53 287–288